



AN ISO 9001 : 2008 COMPANY & NABL ACCREDITED LABORATORY AS PER ISO/IEC 17025:2005

4, 7TH MAIN MALLESWARAM, BANGALORE -3

Certificate No.: TC-5548

CP/TF/01

TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : CP-2017-07-21-01 Date: 24/07/2017

Customer : Assistant Executive Engineer, Byatarayanapura Sub division, BBMP, Bangalore.

Address : Byatarayanapura Sub division, BBMP, Bangalore.

Project Name : Improvements to roads and drains at Chokkanahalli layout in Ward no.05, Byatarayanapura Sub division.

Agency : Sri. N. Naveen Kumar, #04, 4th cross, Jalageramma Temple road, Bangalore-64.

Customer's Reference : BBMP/EE/BTP/WO/77/2017-18

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 21-07-17

Sample ID No : 2017-07-21-01/01

Customer ID : Drain Concrete

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M20 / 7 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 24/07/2017

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm ²)	Average Compressive Strength (N/mm ²)
1	Drain Concrete	M20	17/07/2017	24/07/2017	149.33 X 152.01 X 150.26	22700	8.263	510.7	22.5	22.2
2	Drain Concrete	M20	17/07/2017	24/07/2017	151.64 X 150.49 X 151.48	22820	8.259	508.9	22.3	
3	Drain Concrete	M20	17/07/2017	24/07/2017	150.86 X 150.67 X 151.46	22730	8.257	497.8	21.9	

Note:

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Samples will be disposed after 30 days from the date of issue of test certificate

AS ward no 5
ಶ್ರೀ ನ. ನವೀನ್ ಕುಮಾರ್
2017-07-21-01
Assistant Executive Engineer
Byatarayanapura Sub Division
BBMP Bangalore-560024
ಸಹಾಯಕ ಅಭಿಯಂತರರು
ಬಿ.ಬಿ.ಎಂ.ಪಿ. ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ

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Quality Manager

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HIGHWAY & BUILDING MATERIALS TESTING LABORATORY | STRUCTURAL |
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4, 7TH MAIN MALLESWARAM, BANGALORE -3

Certificate No.: TC-5548

CP/TF/01

TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : CP-2017-07-21-01 Date: 14/08/2017

Customer : Assistant Executive Engineer, Byatarayanapura Sub division, BBMP, Bangalore.

Address : Byatarayanapura Sub division, BBMP, Bangalore.

Project Name : Improvements to roads and drains at Chokkanahalli layout in Ward no.05, Byatarayanapura Sub division.

Agency : Sri. N. Naveen Kumar, #04, 4th cross, Jalageramma Temple road, Bangalore-64.

Customer's Reference : BBMP/EE/BTP/WO/77/2017-18

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 21-07-17

Sample ID No : 2017-07-21-01/02

Customer ID : Drain Concrete

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M20 / 28 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 14/08/2017

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm ²)	Average Compressive Strength (N/mm ²)
1	Drain Concrete	M20	17/07/2017	14/08/2017	151.22 X 150.51 X 150.76	22760	8.264	400.6	17.6	17.9
2	Drain Concrete	M20	17/07/2017	14/08/2017	151.47 X 151.31 X 151.72	22919	8.179	417.1	18.2	
3	Drain Concrete	M20	17/07/2017	14/08/2017	149.86 X 149.68 X 150.64	22431	8.187	401.5	17.9	

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AS Ward No 5
17/08/2017
Assistant Executive Engineer
Byatarayanapura Sub Division
B.B.M.P Bangalore-560024
ಸಹಾಯಕ ಅಭಿಯಂತರರು
ಪ್ರಾ.ಪಂ.ಬಿ. ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ

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4, 7TH MAIN MALLESWARAM, BANGALORE -3

Certificate No.: TC-5548

CP/TF/01

TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

Lab ID : CP-2017-07-03-03 Date: 05-07-17
 Customer : Assistant Executive Engineer, Byatarayanapura Sub division, BBMP, Bangalore.
 Address : Byatarayanapura Sub division, BBMP, Bangalore.
 Project Name : Improvements to roads and drains at Chokkanahalli layout in Ward no.05, Byatarayanapura Sub division.
 Agency : Sri. N. Naveen Kumar, #04, 4th cross, Jalageramma Temple road, Bangalore-64.
 Customer's Reference : BBMP/EE/BTP/WO/77/2017-18
 Source of Sample : Sample supplied by Agency
 Sample Condition : Satisfactory
 Date of Receipt : 03-07-17
 Sample ID No : 2017-07-03-03/01
 Sample Type : Birla Super 53grade
 Reference to BIS codes : IS 12269 : 2013, 53 Grade Ordinary Portland cement Specification ,
 IS 4031 (Part 1,2 3,4,5, 6,11):1988
 IS 4031 Part 1 DETERMINATION OF FINENESS BY DRY SIEVING, Clause 4.4
 IS 4031 Part 2, Determination of Fineness by Blaine Air Permeability Method, Clause 5
 IS 4031 Part 3, Determination of Soundness, Clause 5, Clause 6
 IS 4031 Part 4, Determination of Consistency of Standard Cement Paste, Clause 5
 IS 4031 Part 5, Determination of Initial & Final Setting Time, Clause 5
 IS 4031 Part 11, DETERMINATION OF DENSITY , Clause 6
 Date of test : 04-07-17

Sl.No.	Physical properties	Results	Requirement as per IS 12269: 2013
1	Fineness by dry sieving (%)	1.95	—
2	Fineness by Air permeability method (m ² /kg, Min)	268.8	225m ² /kg, Min
3	Density (gm/cc)	3.1	—
4	Standard Consistency (%)	28.0%	Not specified
5	Initial Setting time	145 minutes	Not less than 30 minutes
6	Final Setting time	260 minutes	Not more than 600 minutes
7	Soundness (Le Chatelier's Method)	1.5mm	Not more than 10 mm

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AK Ward nos
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 ಬಿ.ಬಿ.ಎಂ.ಪಿ.
 Assistant Executive Engineer
 Byatarayanapura Sub Division
 B.B.M.P Bangalore-560024

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TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

Lab ID : CP-2017-07-03-03 Date: 01-08-17
 Customer : Assistant Executive Engineer, Byatarayanapura Sub division, BBMP, Bangalore.
 Address : Byatarayanapura Sub division, BBMP, Bangalore.
 Project Name : Improvements to roads and drains at Chokkanahalli layout in Ward no.05, Byatarayanapura Sub division.
 Agency : Sri. N. Naveen Kumar, #04, 4th cross, Jalageramma Temple road, Bangalore-64.
 Customer's Reference : BBMP/EE/BTP/WO/77/2017-18
 Source of Sample : Sample supplied by Agency
 Sample Condition : Satisfactory
 Date of Receipt : 03-07-17
 Sample ID No : 2017-07-03-03/01
 Sample Type : Birla Super 53grade
 Reference to BIS codes : IS 12269 : 2013, 53 Grade Ordinary Portland cement Specification ,
 IS 4031 Part 4, Determination of Consistency of Standard Cement Paste, Clause 5
 IS 4031 Part 6, Determination of Compressive Strength, Clause 6
 Date of test : 04-07-17

Compressive Strength			
Sl.No.	Physical properties	Results	Requirement as per IS 12269: 2013
1	3 Days	28.0N/mm ²	Not less than 27 N/mm ²
2	7 Days	38.5N/mm ²	Not less than 37 N/mm ²
3	28 Days	55.5N/mm ²	Not less than 53 N/mm ²

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AE Ward No 5
 ಸಹಾಯಕ ಅಧೀಕ್ಷಕರು
 03-07-17
 Assistant Executive Engineer
 Byatarayanapura Sub Division
 BBMP Bangalore-560024
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4, 7TH MAIN MALLESWARAM, BANGALORE -3

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CP/TF/01

TEST REPORT ON COARSE AGGREGATES

Lab ID : CP-2017-07-03-03 Date: 06-07-17

Customer : Assistant Executive Engineer, Byatarayanapura Sub division, BBMP, Bangalore.

Address : Byatarayanapura Sub division, BBMP, Bangalore.

Project Name : Improvements to roads and drains at Chokkanahalli layout in Ward no.05, Byatarayanapura Sub division.

Agency : Sri. N. Naveen Kumar, #04, 4th cross, Jalageramma Temple road, Bangalore-64.

Customer's Reference : BBMP/EE/BTP/WO/77/2017-18

Source of Sample : Sample supplied by Agency

Sample condition : Satisfactory

Date of Receipt : 03-07-17

Sample ID No : 2017-07-03-03/02

Sample Type : 40mm down size coarse aggregate

Reference to BIS codes : IS: 383:2016 (Specification for Coarse and fine Aggregates)
IS: 2386 :1963(Part - 1,3,4) RA2011
IS 2386 Part 1: Particle Size and Shape
IS 2386 Part 3: Specific gravity, Density, Voids, Water Absorption
IS 2386 Part 4: Mechanical Properties

Date of test : 03-07-17

SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 40MM DOWN COARSE AGGREGATE:

Total weight taken : 15000 grams

Sample No.	Sieve No.	Weight Retained in gms	Cumulative Weight Retained in gms	% Cumulative Weight Retained	% Passing	Required as per IS 383:2016
1	80 mm	0	0	0.0	100	100
2	40 mm	754	754	5.0	95.0	90-100
3	20 mm	6592	7346	49.0	51.0	30-70
4	10 mm	4759	12105	80.7	19.3	10-35
5	4.75 mm	2595	14700	98.0	2.0	0-5
6	Pan	300	15000	100.0	0	---

Page 1/2

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TEST REPORT ON COARSE AGGREGATES

Lab ID : CP-2017-07-03-03

Date: 06-07-17

Sample ID No : 2017-07-03-03/02

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS:383-2016
1	Flakiness Index(%)	10.7	Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate
2	Elongation Index(%)	12.1	
3	Specific Gravity	2.59	—
4	Bulk Density(Loose) (Kg/l)	1.46	—
5	Bulk Density(Compacted) (Kg/l)	1.52	—
6	Water Absorption(%)	0.18	—

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ಆರ್.ಕೆ.ಎಸ್.ಎಸ್.
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Page 2/2

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CP/TF/01

TEST REPORT OF FINE AGGREGATE

Lab ID : CP-2017-07-03-03 Date: 06-07-17
 Customer : Assistant Executive Engineer, Byatarayanapura Sub division, BBMP, Bangalore.
 Address : Byatarayanapura Sub division, BBMP, Bangalore.
 Project Name : Improvements to roads and drains at Chokkanahalli layout in Ward no.05, Byatarayanapura Sub division.
 Agency : Sri. N. Naveen Kumar, #04, 4th cross, Jalageramma Temple road, Bangalore-64.
 Customer's Reference : BBMP/EE/BTP/WO/77/2017-18
 Source of Sample : Sample supplied by Agency
 Sample Condition : Satisfactory
 Date of Receipt : 03-07-17
 Sample ID No : 2017-07-03-03/03
 Sample Type : Fine Aggregate
 Reference to BIS codes : IS 383 : 2016 (Specification for Coarse and fine Aggregates)
 IS: 2386 :1963(Part - 1, 3) RA2012
 IS 2386 Part 1: Particle Size and Shape
 IS 2386 Part 3: Specific gravity, Density, Voids, Water Absorption
 Date of test : 03-07-17

Total weight taken : 1000 grams

Sl.no	Sieve Size	Weight Retained (gms)	Cumulative Weight Retained (gms)	% Cumulative Weight Retained	% Passing	Requirement as per IS 383:2016			
						Grading Zone I	Grading Zone II	Grading Zone III	Grading Zone IV
1	10 mm	0	0	0.0	100.0	100	100	100	100
2	4.75 mm	32	32	3.2	96.8	90-100	90-100	90-100	95-100
3	2.36 mm	178	210	21.0	79.0	60-95	75-100	85-100	95-100
4	1.18 mm	195	405	40.5	59.5	30-70	55-90	75-100	90-100
5	600 micron	219	624	62.4	37.6	15-34	35-59	60-79	80-100
6	300 micron	193	817	81.7	18.3	5-20	8-30	12-40	15-50
7	150 micron	101	918	91.8	8.2	0-10	0-10	0-10	0-15
8	Pan	82	1000	100.0	0.0	---	---	---	---

Result : The tested Sample Conforms to Grading Zone II

AS per nos 5
 2017-07-03-03/03
 Assistant Executive Engineer
 Byatarayanapura Sub Division
 B.B.M.P Bangalore-560024
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Certificate No.: TC-5548

TEST REPORT OF FINE AGGREGATE

Lab ID : CP-2017-07-03-03

Date: 06-07-17

Sample ID No : 2017-07-03-03/03

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS 383:2016
1	Water Absorption(%)	1.87	—
2	Specific Gravity	2.55	—
3	Material finer than 75 micron(%)	7.3	Uncrushed fine Aggregate Max 3%, Crushed Fine aggregate Max 15%, Mixed Fine aggregate Max 12%, Manufactured Fine aggregate Max 10%

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1005110

Assistant Executive Engineer
Byatarayanapura Sub Division
B.B.M.P. Bangalore-560024



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R KARTHIK RECHAN

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Quality Manager

Page 2/2

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TEST RESULTS OF GRADATION FOR WMM

Lab ID : CP-RW-2017-08-01-02 Date: 03-08-17
 Customer : Assistant Executive Engineer, Byatarayanapura Sub division, BBMP, Bangalore.
 Address : Byatarayanapura Sub division, BBMP, Bangalore.
 Project Name : Improvements to roads and drains at Chokkanahalli layout in Ward no.05, Byatarayanapura Sub division.
 Agency : Sri. N. Naveen Kumar, #04, 4th cross, Jalageramma Temple road,
 Customer Reference : BBMP/EE/BTP/WO/77/2017-18
 Source of Sample : Sample supplied by Agency
 Sample Condition : Satisfactory
 Date of Receipt : 01-08-17
 Sample ID No : 2017-08-01-02/01
 Type of Mix : WMM (Wet Mix Macadam)
 Date of test : 01-08-17
 Oven Dry Weight : 11000 Grams

IS Sieve Size(mm)	Weight Retained (gm)	Cumulative Weight Retained (gm)	% Cumulative Weight Retained	% Passing	Spec.I.Vide Table 400.13 MORTH Specification
53	0	0	0.0	100.0	100
45	303	303	2.8	97.2	95-100
22.4	2273	2576	23.4	76.6	60-80
11.2	2216	4792	43.6	56.4	40-60
4.75	2283	7075	64.3	35.7	25-40
2.36	1678	8753	79.6	20.4	15-30
0.6	656	9409	85.5	14.5	8-22
0.075	1365	10774	97.9	2.1	0-5

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Quality Manager

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 ವಿ.ವಿ.ಎಂ.ಪಿ. ಮಲ್ಲೇಶ್ವರಂ ನಗರ ಉಪ ವಿಭಾಗ

Page 1/1

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4, 7TH MAIN MALLESWARAM, BANGALORE -3

Certificate No.: TC-5548

TEST REPORT OF AGGEGRATE IMPACT VALUE

IS: 2386 Part IV

Lab ID : CP-RW-2017-08-01-02 Date: 03-08-17
 Customer : Assistant Executive Engineer, Byatarayanapura Sub division, BBMP,
 Address : Byatarayanapura Sub division, BBMP, Bangalore.
 Project Name : Improvements to roads and drains at Chokkanahalli layout in Ward no.05,
 Agency : Sri. N. Naveen Kumar, #04, 4th cross, Jalageramma Temple road,
 Customer Reference : BBMP/EE/BTP/WO/77/2017-18
 Source of Sample : Sample supplied by Agency
 Sample Condition : Satisfactory
 Date of Receipt : 01-08-17
 Sample ID No : 2017-08-01-02/01
 Type of Mix : Coarse Aggregate for WMM (Wet Mix Macadam)
 Date of test : 01-08-17

Sl.No	Particulars of observations	Index	TEST 1	TEST 2
1	Total weight of the surface dry sample sample (passing 12.5 mm and retained on 10mm sieve)	A	306.2	306.2
2	Weight of fraction passing 2.36mm sieve After giving 15 blows	B	73.9	74.0
3	weight of fraction retained 2.36mm sieve After giving 15 blows	C	231.9	231.8
4	Total weight of (B+C) is less than the initial weight (weight A) by more than one gram the result shall be discarded and a fresh test made.	A-(B+C)	0.4	0.4
5	Aggregate impact value	(B/A)*100	24.1	24.2
6	Aggregate impact value (Mean of two tests)	Percentage	24.1	

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4, 7TH MAIN MALLESWARAM, BANGALORE -3

Certificate No.: TC-5548

DETERMINATION OF FLAKINESS INDEX AND ELONGATION INDEX OF COARSE AGGREGATE (IS 2386 (Part 1) 1963 (RA 2007))

Lab ID : CP-RW-2017-08-01-02 Date: 03-08-17
Customer : Assistant Executive Engineer, Byatarayanapura Sub division, BBMP, Bangalore.
Address : Byatarayanapura Sub division, BBMP, Bangalore.
Project Name : Improvements to roads and drains at Chokkanahalli layout in Ward no.05, Byatarayanapura Sub division.
Agency : Sri. N. Naveen Kumar, #04, 4th cross, Jalageramma Temple road, Bangalore-64.
Customer Reference : BBMP/EE/BTP/WO/77/2017-18
Source of Sample : Sample supplied by Agency
Sample Condition : Satisfactory
Date of Receipt : 01-08-17
Sample ID No : 2017-08-01-02/01
Type of Mix : Coarse Aggregate for WMM (Wet Mix Macadam)
Date of test : 01-08-17

Result:

Index	Percentage of Flakiness and Elongation Index	Secified limits as per MORTH specification table 400-12
Flakiness Index	10.8%	Combined Flakiness & Elongation Index for WMM is Maximum 35%
Elongation Index	11.6%	
Combined Flakiness and Elongation Index for WMM	22.4%	

Note:-

The results pertain to the samples received and tested.
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R. Karthik

R KARTHIK RECHAN
Authorized Signatory
Quality Manager

ಗೌರವಾನ್ವಿತ
ಸಹಾಯಕ ಅಧೀಯಂತರು
ಬಿ.ಬಿ.ಎಂ.ಪಿ. ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ

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4, 7TH MAIN MALLESWARAM, BANGALORE -3

TEST RESULTS OF GRADATION FOR SDBC IS 2386 (Part 1) 1963 (RA 2007)

Lab ID : CP-RW-2017-08-07-01 Date: 09-08-17
Customer : Assistant Executive Engineer, Byatarayanapura Sub division, BBMP, Bangalore.
Address : Byatarayanapura Sub division, BBMP, Bangalore.
Project Name : Improvements to roads and drains at Chokkanahalli layout in Ward no.05, Byatarayanapura Sub division.
Agency : Sri. N. Naveen Kumar, #04, 4th cross, Jalageramma Temple road, Bangalore-64.
Customer Reference : BBMP/EE/BTP/WO/77/2017-18
Source of Sample : Sample supplied by Agency
Sample Condition : Satisfactory
Date of Receipt : 07-08-17
Sample ID No : 2017-08-07-01/01
Type of Mix : SDBC-Plant (Semi Dense Bituminous Concrete)
Date of test : 07-08-17
Weight of Sample : 5000 Grams

IS Sieve Size (mm)	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Secified limits as per MORTH specification table 500-15(grading-
13.2	0	0	0	100	100
9.5	418	418	8.36	91.64	90-100
4.75	2203	2621	52.42	47.58	35-51
2.36	1018	3639	72.78	27.22	24-39
1.18	515	4154	83.08	16.92	15-30
0.3	393	4547	90.94	9.06	9-19
0.075	169	4716	94.32	5.68	3-8
PAN	284	5000	100.00	0.00	0

Note:-

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AS Ward No. 05
ಸಹಕಾರಿ ಕೆ.ಎ.ಎಸ್.ಎಂ.ಪಿ. ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ
Assistant Executive Engineer
Byatarayanapura Sub Division
BBMP Bangalore-560024
ಸಹಾಯಕ ಅಧೀನಕರರು
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4, 7TH MAIN MALLESWARAM, BANGALORE -3

Certificate No.: TC-5548

PHYSICAL REQUIREMENTS FOR COARSE AGGREGATE FOR SEMI DENSE BITUMINOUS CONCRETE

Lab ID : CP-RW-2017-08-07-01 Date: 10-08-17
 Customer : Assistant Executive Engineer, Byatarayanapura Sub division, BBMP, Bangalore.
 Address : Byatarayanapura Sub division, BBMP, Bangalore.
 Project Name : Improvements to roads and drains at Chokkanahalli layout in Ward no.05, Byatarayanapura Sub division.
 Agency : Sri. N. Naveen Kumar, #04, 4th cross, Jalageramma Temple road, Bangalore-64.
 Customer Reference : BBMP/EE/BTP/WO/77/2017-18
 Source of Sample : Sample supplied by Agency
 Sample Condition : Satisfactory
 Date of Receipt : 07-08-17
 Sample ID No : 2017-08-07-01/01
 Type of Mix : SDBC (Semi Dense Bituminous Concrete)
 Date of test : 07-08-17

Physical Requirements fo Coarse Aggregate for Semi Dense Bituminous Concrete

Property	Test	Result	Specification	Method of Test
Partical Shape	Flakiness Index	12.3	Combined Flakiness & Elongation Index for DBM is Maximum 35%	IS:2386 Part I
	Elongation Index	11.5		
Strength	Aggregate Impact Value	22.4	Maximum 30%	IS:2386 Part IV
Specific gravity	Specific gravity	2.56	Maximum 2.7	IS:2386 Part III
Water Absorption	Water Absorption	0.25	Maximum 2%	IS:2386 Part III

Note:

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TEST REPORT OF AGGREGATE STRIPPING VALUE OF ROAD AGGRGATE (IS:6241)

Lab ID : CP-RW-2017-08-07-01 Date: 10-08-17
Customer : Assistant Executive Engineer, Byatarayanapura Sub division, BBMP, Bangalore.
Address : Byatarayanapura Sub division, BBMP, Bangalore.
Project Name : Improvements to roads and drains at Chokkanahalli layout in Ward no.05, Byatarayanapura Sub division.
Agency : Sri. N. Naveen Kumar, #04, 4th cross, Jalageramma Temple road, Bangalore-64.
Customer Reference : BBMP/EE/BTP/WO/77/2017-18
Source of Sample : Sample supplied by Agency
Sample Condition : Satisfactory
Date of Receipt : 07-08-17
Sample ID No : 2017-08-07-01/01
Type of Mix : SDBC (Semi Dense Bituminous Concrete)
Date of test : 07-08-17

Type of Binder : 60/70
% of Binder Used : 5.0%
Weight of Aggregate : 200.0 gm
Weight of Binder : 10.0 gm
Temperature of water bath : 40°C

No of test	Retained Stripping Percentage	Stripping Percentage	Average Retained Stripping Percentage	Secified limits as per MORTH specification table 500-8
1	98.0	2.0	98.0	Minimum Retained Coating 95%
2	98.5	1.5		
3	97.5	2.5		

Note:

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TESTS RESULTS ON STABILITY OF MIX

Lab ID : CP-RW-2017-08-07-01 Date: 10-08-17
 Customer : Assistant Executive Engineer, Byatarayanapura Sub division, BBMP, Bangalore.
 Address : Byatarayanapura Sub division, BBMP, Bangalore.
 Project Name : Improvements to roads and drains at Chokkanahalli layout in Ward no.05, Byatarayanapura Sub division.
 Agency : Sri. N. Naveen Kumar, #04, 4th cross, Jalageramma Temple road, Bangalore-64.
 Customer Reference : BBMP/EE/BTP/WO/77/2017-18
 Source of Sample : Hot Mix Plant, Bangalore
 Sample Condition : Satisfactory
 Date of Receipt : 07-08-17
 Sample ID No : 2017-08-07-01/01
 Type of Mix : SDBC (Semi Dense Bituminous Concrete)
 Date of test : 07-08-17

The results of the tests conducted on the Semi Dense Bituminous Concrete mix sample are as follow

Sl.No	Particulars of observations	TEST 1	TEST 2	Secified limits as per MORTH specification table 500-16
1	Marshal Stability at 60°C, KN	10.38	10.47	8.2KN(min)
2	Marshal flow at 60°C, mm	3.47	3.23	2-4
3	Percent air Voids	4.38	4.19	3-5
4	Percent Voids in mineral Aggregate(VMA %)	13.38	13.49	13-15
5	Percent Voids filled with Bitumen(VFB %)	71.56	71.37	65-75
6	Density, g/cc	2.26	2.25	-

Note:-

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All information furnished by Customer/Representative

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ALL WORKS NOTED
 20.08.17
 Assistant Executive Engineer
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**TEST RESULTS OF GRADATION FOR DBM
(IS 2386:(Part 1) 1963 (RA2011))**

Lab ID : CP-RW-2017-08-28-01 Date: 29-08-17
Customer : Assistant Executive Engineer, Byatarayanapura Sub division, BBMP, Bangalore.
Address : Byatarayanapura Sub division, BBMP, Bangalore.
Project Name : Improvements to roads and drains at Chokkanahalli layout in Ward no.05, Byatarayanapura Sub division.
Agency : Sri. N. Naveen Kumar, #04, 4th cross, Jalageramma Temple road, Bangalore-64.
Customer Reference : BBMP/EE/BTP/WO/77/2017-18
Source of Sample : Sample supplied by Agency
Sample Condition : Satisfactory
Date of Receipt : 28-08-17
Sample ID No : 2017-08-28-01/01
Type of Mix : SDBC (Semi Dense Bituminous Concrete)
Date of test : 28-08-17

Sl.no	Description	Index	Trail 1	Trail 2
1	Weight of the Sample	A	502	501
2	Weight of the sample After extraction	B	478	476
3	Bitumen percentage	$\frac{A-B}{A} \times 100$	4.78	4.99
4	Average percentage	%	4.9	

AE way No 5
28/8/17

28/8/17
Assistant Executive Engineer
Byatarayanapura Sub Division
B.B.M.P Bangalore-560024



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R-Karthik Rechan
Authorized Signatory
Quality Manager

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4, 7TH MAIN MALLESWARAM, BANGALORE -3

Lab ID : CP-RW-2017-08-28-01

Date: 29-08-17

Sample ID No : 2017-08-28-01/01

AFTER EXTRACTION(Trail-1)

Weight of Sample(gm) : 478

IS Sieve Size(mm)	Weight Retained(gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-15(grading-2)
13.2	0	0	0	100.0	100
9.5	21	21	4.39	95.6	90-100
4.75	238	259	54.18	45.8	35-51
2.36	35	294	61.51	38.5	24-39
1.18	43	337	70.50	29.5	15-30
0.3	65	402	84.10	15.9	9-19
0.075	39	441	92.26	7.7	3-8
PAN	27	468	97.91	2.1	0

AFTER EXTRACTION(Trail-2)

Weight of Sample(gm) : 476

IS Sieve Size(mm)	Weight Retained(gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-15(grading-2)
13.2	0	0	0	100.0	100
9.5	23	23	4.83	95.2	90-100
4.75	239	262	55.04	45.0	35-51
2.36	39	301	63.24	36.8	24-39
1.18	39	340	71.43	28.6	15-30
0.3	61	401	84.24	15.8	9-19
0.075	37	438	92.02	8.0	3-8
PAN	29	467	98.11	1.9	0

Note:-

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AS per N.O. 5
2017/08/28
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